Amended 11-19-02

#7 / Appeal Brief

Attorney Docket No.: DGL-10002/15 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Glen Davis		
Serial No.:	09/837,824	Examiner:	Steven B. Wong
Filed:	April 18, 2001	Group Art Unit:	3711
For:	WATER SKIPPING ARTICLE INCORPORATING ELLIPTICAL OUTLINE AND HOLLOWED INTERIOR CORE		

APPEAL BRIEF

Assistant Commissioner for Patents
Washington, D.C. 20231
Attention: Board of Patent Appeals

Dear Sir or Madam:

Responsive to the Final Office Action dated July 23, 2002, Applicant appeals the final rejection of the present application. Attached hereto is Applicant's Notice of Appeal. Applicant further avers as follows:

1.0 Real Party in Interest.

The party named in the caption of this brief, i.e., Glen Davis, is the real party in interest in the present application.

2.0 Related Appeals and Interferences.

No other appeals or interferences are known by Applicant to be pending and which will have any effect on the Board's decision in the pending appeal.

3.0 Status of Claims.

Claims 1-3 and 5-10 remain pending in the application and are the subject of this appeal. Claim 4 is cancelled by the Amendment filed on May 24, 2002.

4.0 Status of Amendments.

The only Amendment presented by Applicant in this application, namely that again being Amendment A filed May 24, 2002, was entered and responded to by the Examiner's subsequent and Final Office Action dated July 23, 2002.

5.0 Summary of the Invention.

The present invention discloses a water skipping article 10 (page 6, line 1, Figs. 1-4) includes a three-dimensional body, preferably exhibiting a substantially smooth exterior with a substantially circular and smooth edged outer perimeter 12 (page 6, line 15, Figs 1, 3 and 4). The article 10 may further be constructed of a biodegradable or "clay like" material (page 6, line 19) thus effectively rendering the present article a disposable article which causes no adverse effects to the environment, such as after being skipped along a water surface and subsequently sinking to the bottom of the body of water.

A side profile of the article 10, as defined by the smooth edged outer perimeter 12, includes both an upper elliptically extending face 14 (page 7, line 6, Figs. 1 and 3) and a lower elliptically extending face 16 (page 7, line 6, Figs. 1 and 3). The elliptically extending faces 14 and 16 extend along the top and bottom, respectively, of the article 10 and converge into the smooth edged and circular extending outer perimeter 12 (see Fig. 3).

The article body defines a substantially solid interior 17 (page 7, line 16, Figs. 3 and 4) and further includes substantially elliptical and interiorly extending upper and lower surfaces 18 and 20 (page 7, line 14, Fig. 3) which define a hollowed, substantially elliptical and interior cavity 22 (page 7, line 14, Fig. 3) suspended within the body and located in a substantially centric position within the solid body interior 17. As with the upper and lower elliptically extending faces 14 and 16 defining the outer body perimeter, the interiorly

extending upper and lower surfaces 18 and 20 likewise converge along an outer and perimeter extending edge 24 page 7, line 19, Fig. 3).

The outer body establishes a specified width, see dimensional arrow 26, and thickness, see dimensional arrow 28 (page 8, line 2, Fig. 3). Optimum flying, spinning and skipping characteristics are achieved at an established width 26 to thickness 28 ratio of 4:1 (page 8, line 5), combined with the elliptical upper and lower face configuration of the body. Other ratios, such as 3:1, 2:1 (page 8, line 8) are incorporated and with varying effect on the performance of the article 10.

The interiorly configured cavity 22 establishes a specified width, see dimensional arrow 30, and thickness, see dimensional arrow 32 (page 8, lines 11-13, Fig. 3). Optimum flying, spinning and skipping characteristics are achieved at an established width 30 to thickness 32 ratio in a range of 2:1 to 3:1 (page 8, line 16) and combined with the elliptical upper and lower face configurations of both the body (14 and 16), as well as the interiorly extending surfaces 18 and 20 defining the cavity 22.

A preferred variant of the skipping article 10 contemplates a body having an overall width in the range of 2½" to 3" and an associated thickness in the range of 0.50" to 1.00" (page 9, line 4). Corresponding dimensions of the interiorly configured cavity 22 further range from 1" to 1½" width and 0.40" to 0.60" thickness (page 9, line 5), these dimensions having been found to maximize the ease of gripping of the article 10 within a hand 34 of a user 36 (page 8, line 6, Fig. 2) and, during the sideways throwing/horizontally inducing trajectory motion illustrated in phantom by path 38, tend to maximize the skipping effect, at 40 and 42 (page 8, line 9, Fig. 2), upon a surface 44 of the body of water. As is also known in general physics, the incidence of multiple skips (beyond those made possible by the geometry of the article of the present invention) is assisted by surface tension created at the

water surface level 44 (page 8, line 9, Fig. 3). Surface tension is created at the boundary between the water and air layers by virtue of the absence of downward forces opposing the upward forces directed at the top water layer and by the descending water layers.

6.0 Issues.

The issues presented for review include the rejection of claim 1 as anticipated by Hand 3,544,113, the rejection of claims 3, 5-8 and 10 as being obvious over Hand, and the further rejection of claims 2 and 9 as being obvious over the combination of Hand in view of Glovak 4,151,997.

7.0 Grouping of Claims.

The claims under appeal in the present application do not stand or fall together. Rather, claim 1 defines a first group and stands or falls separately. Claims 3, 5, 6 and 8 define a second grouping and stand or fall together. Claims 2 and 9 define a third grouping and stand or fall together. Finally, claim 10 defines a fourth group and stands or falls separately.

8.0 Argument.

Group I – Claim 1.

Hand was cited as teaching a set of disks exhibiting different flotation characteristics, and in particular which includes distinctive floatable and non-floatable disk assemblies. The buoyancy of the floating and controlled sinking members is further disclosed as being varied by changing a structural characteristic of the body assembly.

The Examiner asserted the position, again referencing the remarks section on pages 2 and 3 of the February 27, 2002 Office Action as well as page 2, paragraph 2, of the Final Office Action dated July 23, 2002, that Hand disclosed in particular the three dimensional body in relevant part defined by upper and lower elliptically extending faces (41, 42) and a

hollow interior cavity (at 57 in the variant of Fig. 5). With reference further to the obviousness rejections, the Examiner stated that it would have been obvious to one of ordinary skill in the art to form the width of the skipping article of Hand with the instantly claimed dimensions as the Applicant has not shown the criticality by a new and unexpected result and it appears that the dimensions shown by Hand would accomplish similar purposes. As further stated by the Examiner, on page 3, paragraph 5, it was argued that, while Hand does not particularly state that the surfaces are elliptical, it does not preclude one of ordinary skill in the art from discerning from the Figures that the water skipping article is elliptical in cross section.

Applicant respectfully again disputes the Examiner's assertions as to the Hand reference as relating to the claims in the present application. In particular, claim 1 recites such features as the substantially smooth edged and circular outer perimeter of the three-dimensional body, having the upper and lower elliptically extending faces converging into the outer perimeter, and further reciting the interior cavity of the body further being defined by the likewise substantially elliptical and interiorly extending surfaces. The elliptical configuration of the inner cavity, as recited in claim 1 and established by the present disclosure, enables the creation of centrifugal forces applied to the outer elliptical perimeter of the article and thus increasing the individual incidences of the article when contacting the water surface.

Respectfully, it is Applicant's position that the inner and outer elliptical configurations of the claim 1 are critical to the invention and the Hand patent simply does not teach or show them. The further statement of the Examiner, that although the Hand patent does not particularly state that the surfaces are elliptical, it does not preclude one of ordinary

skill in the art from discerning that the article is elliptical in cross section, is submitted by the Applicant to be unresponsive.

More to the point, and notwithstanding the Examiner's assertions to the contrary, it is respectfully submitted that the outer faces (41 and 42) in Fig. 5 of Hand are not elliptical surfaces. Nowhere in the disclosure of Hand is it stated or supported that the faces 41 and 42 are elliptical in shape and neither can this assertion be supported with reference to the two dimensional side view shown in Fig. 5 of Hand. Furthermore, Hand only discloses that the outer faces are "rounded", from which the assertion of them being elliptical is drawn. It is further respectfully disputed that the air pocket 57 defined by the concave surfaces 49 and 55 identified in Hand (see Fig. 5 variant) discloses the creation of inner elliptical surfaces as set forth in the present application.

As repeatedly stated herein, the key feature of the inner and outer elliptical configurations (and as will be discussed in reference to the later groupings of the claims, the different ratios established by these inner and outer configurations) actions to create the outward and centrifugal forces necessary to establish the desired gyroscopic effect of the water skipping article and to thereby increase the individual incidences of the article contacting the water surface providing further for self-correcting and self-righting upon contact with the water surface. In contrast, neither Hand or Glovak mentions any gyroscopic or self-correcting (self-righting) flight effects upon contact with the water surface. Referring again to the Examiner's comments on page 3, paragraph 5, namely that Applicant has been invited to provide evidence of a new and unexpected result obtained from the particularly claimed dimensions, Applicant can only state that the above-argued distinctions, i.e., the outward centrifugal (gyroscopic) effects created by the inner and outer elliptical

configurations, are the new and "unexpected" result of the particularly claimed dimensions of independent claim 1.

Accordingly, it is submitted that claim 1 is not anticipated by Hand and is allowable.

Group II – Claims 3, 5, 6 and 8.

Claims 3, 5, 6 and 8 constitute the second grouping of claims and recite particular ratios of width to thickness of body. These again include ranges of between 3:1 to 5:1 (claim 3), at least 2:1 (claim 5), between 2:1 to 3:1 (claim 6) and, finally, the interior cavity of the body defining a width in the range of 1" to 1.5" and a thickness in the range of .4" to .6". The Examiner generally stated, in reference to claims 3, 5, and 6, that it would have been obvious to one of ordinary skill in the art to form the skipping article of Hand with the claimed dimensions to accomplish similar purposes.

Progressing further from the arguments presented in Group I above, Hand again simply does not teach or suggest the width to thickness ratios recited in each of claims 3, 5 and 6. Nor does Applicant believe that it would be obvious to import these limitations into the Hand device, since the performance advantages it provides the present design, in any event, would not correspondingly be provided to Hand.

Group III – Claims 2 and 9.

As to claims 2 and 9, the substantially same features, namely the mirroring elliptical surfaces associated with both the three dimensional exterior of the body as well as the exterior surfaces defining the interior cavity, are again recited (in claim 9 directly and in the underlying and preceding limitations of claim 1). Claims 2 and 9 recite the three-dimensional water skipping article as being constructed of a biodegradable or environmentally inert material, the purpose for which being that the disk is a single use, non-retrievable item.

Glovak was cited in combination with Hand as teaching a water skipping article formed from sand and a water soluble organic binder. In response, Applicant repeats in substance the arguments and distinctions previously presented. Furthermore, it is respectfully submitted that Glovak, while teaching the provision of a hydroplaning disc constructed of sand with a water soluble organic binder, does not teach or suggest the elliptical outer and inner configurations of the water skipping article with interiorly defined cavity as set forth in the claims of the present invention. Rather, Glovak teaches a solid disk shaped element of unrelated configuration in comparison to the elliptical configuration of the present invention. Further, there is no teaching or suggestion in either Glovak or Hand which arguably supports combining the references together in a rejection of claims in the present application.

Group IV- Claim 10.

Independent claim 10, added by the May 24, 2002 amendment, repeats in substance the features of independent claim 1, with the additional and particular limitation of the first outer elliptical configuration and the second inner (interior cavity) elliptical configuration, these further being of different width to thickness ratio. Hand illustrates the pieces 41 and 42 which, upon assembly, teach an outer configuration and in inner configuration (see Fig. 5 in Hand). However, Hand does not teach nor does it suggest these inner and outer configurations expressed as different and varying width to thickness ratios.

Once again, the elliptical configuration of both the upper and lower outer extending faces in the present invention, as well as those of the upper and lower surfaces defining the interior cavity, provides the water skipping device of the present invention with enhanced performance characteristics, both in terms of length of flight and incidence of skipping upon a water surface. The varying width to thickness rations expressed between the inner and outer configurations (as recited in claim 10) in addition to the provision of the smooth edged

circular outer perimeter is not taught by Hand, and which instead shows either a pointed outer edge (see 45 in Fig. 5) or provision of such as a cushioning ring placed about the annular outer edge of an assembled pair of disk members.

The advantage of the elliptical configuration of the present invention, and as clearly supported by the present disclosure, is that it provides the leading edge with an airfoil. The further effect of the outer and inner elliptical configuration of the water skipping article, as recited in independent claim 10, is that the alternating ratio of the inner elliptical configuration contributes to the "centrifugal forces" applied to the corresponding and outer elliptical configuration of the article, the net result once again being an increased number of incidences of the article contacting the water in a skipping fashion, the additional effect being the creation of a gyroscopic effect to the device of the present invention, not present in Hand.

In conclusion, it is respectfully submitted that the claims, as argued herein in Groups I-IV are patentably distinguishing over the prior art and are submitted to be allowable.

Respectfully submitted,

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Judith S. Lange

9.0 Appendix.

1. A water skipping article, comprising:

a three-dimensional body having a substantially smooth edged and elliptical outer perimeter, said body further including a side profile defined by upper and lower elliptically extending faces which converge into said outer perimeter, and

said body exhibiting a smooth and continuous exterior surface and further defining a hollowed and interior cavity suspended within said body, said body further including substantially elliptical and interiorly extending surfaces defining said interior cavity;

wherein, upon a user launching said article in a substantially horizontal trajectory and with a specified rotational spin, said interior cavity causing centrifugal forces to be applied to said outer perimeter of said article and said elliptically extending faces increasing individual incidences of said article contacting a water surface.

2. The water skipping article as described in claim 1, said body having a specified width and thickness and being constructed from a material selected from the group including of an environmentally inert and biodegradable material.

3. The water skipping article as described in claim 1, said body having a specified width to thickness ratio in a range of between 3:1 to 5:1.

5. The water skipping article as described in claim 1, said elliptical interior cavity further having a specified width to thickness ratio of at least 2:1.

6. The water skipping article as described in claim 5, said elliptical interior cavity further defining a specified width to thickness ratio of between 2:1 to 3:1.

7. The water skipping article as described in claim 3, said body having a width in the range of between 2.0" to 4.0" and a thickness in a range of .500" to 1.00".

8. The water skipping article as described in claim 7, said body including substantially elliptical and interiorly extending surfaces defining said interior cavity, said elliptical interior cavity defining a width in the range of 1" to 1.5" and a thickness in the range of .4" to .6".

9. A water skipping article for use by a user in launching the article in a substantially horizontal trajectory and with a specified rotational spin, said article comprising:

a three-dimensional body constructed of a material selected from the group including biodegradable materials and environmentally inert materials and having an elliptically shaped smooth and continuous exterior surface with a substantially elliptical and smooth edged outer perimeter, said body further including a side profile defined by upper and lower elliptically extending faces which converge into said outer perimeter; and

said body further defining a hollowed, substantially elliptical and interior cavity suspended within said body, said interior cavity causing centrifugal forces to be applied to said outer perimeter of said article, upon launching by said user and increasing individual incidences of said article contacting a water surface in a skipping fashion.

10. A water skipping article, comprising:

a three-dimensional body having a substantially smooth edged and elliptical outer perimeter, said body further including a side profile defined by a first ellipse created by upper and lower elliptically extending faces which converge into said outer perimeter, and

said body exhibiting a smooth and continuous exterior surface and further defining a hollowed and interior cavity suspended within said body, said body further including a second ellipse created by substantially elliptical and interiorly extending surfaces defining said interior cavity, said second inner ellipse being of a different width to thickness ratio than that of said first ellipse;

wherein, upon a user launching said article in a substantially horizontal trajectory and with a specified rotational spin, said elliptical configuration of said interior cavity causing centrifugal forces to be applied to said outer perimeter of said article and said elliptically extending faces increasing individual incidences of said article contacting a water surface.